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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YANG-PIOUNG KIM

Appeal 2008-3277
Application 10/022,184
Technology Center 1700

Decided: September 29, 2008

Before CHUNG K. PAK, PETER F. KRATZ, and
ROMULO H. DELMENDO, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 11 and 12, all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 6.

STATEMENT OF THE CASE

The subject matter on appeal is directed to a light protecting sheet and a method of making the same (Spec. 1). Further details of the appealed subject matter are recited in claims 11 and 12 reproduced below:

11. A method of manufacturing a light protecting sheet comprising:

applying a two-component adhesive of white color directly onto one side of an aluminum-deposited polyethylene terephthalate film;

overlaying a transparent polyethylene terephthalate film on the adhesive;

spreading white ink over an opposite side of the aluminum-deposited polyethylene terephthalate film; and

coating a hot melt layer directly onto the white ink spread over said opposite side.

12. A light protecting sheet comprising:

an aluminum-deposited polyethylene terephthalate film;

a transparent polyethylene terephthalate film coated onto one side of the aluminum-deposited polyethylene terephthalate film via a two-component adhesive without any layer therebetween, wherein said two-component adhesive is mixed with a white pigment to fix said transparent polyethylene terephthalate film onto the aluminum-deposited polyethylene terephthalate film;

a white ink layer coated on an opposite side of the aluminum deposited polyethylene terephthalate film; and

a hot melt layer directly covering the white ink layer without any layer therebetween.

As evidence of unpatentability of the claimed subject matter, the Examiner has relied upon the following references:

Murphy	US 4,483,712	Nov. 20, 1984
Whyzmuzis	US 5,523,335	Jun. 4, 1996
Hein III (Hein)	US 5,542,529	Aug. 6, 1996

Miyamoto

US 5,656,701

Aug. 12, 1997

The Examiner has finally rejected claims 11 and 12 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Hein and either Whyzmuzis, Murphy or Miyamoto.

The Appellant appeals from the Examiner's decision finally rejecting the claims on appeal under 35 U.S.C. § 103(a).

RELEVANT FACTUAL FINDINGS (FF)

1. Hein teaches a high barrier packaging material comprising a transparent polyethylene terephthalate (PET) heat seal layer, an opaque or transparent ink layer, an aluminum metallized polyethylene terephthalate (PET) layer, an opaque or transparent ink layer and polyethylene terephthalate (PET) hot seal layer in a sequence (col. 7, l. 19 to col. 8, l. 19, together with col. 5, ll. 1-7).
2. Hein teaches that the ink layer may be printed over the entire surface of the top aluminum metallized surface (barrier material) and may provide various colors, including yellow transparent ink, to yield a variety of gloss or satin-like metallic finishes on the aluminum metallized surface (barrier material) (col. 8, ll. 30-39).
3. Whysmuzis teaches a printing ink useful for a wide variety of substrates, including plastic packaging materials made of polyethylene terephthalate, contains a resin binder, a pigment and a solvent (col. 1, ll. 6-22).
4. Whysmuzis teaches forming a laminate by applying heat-activated adhesive on an ink layer (inclusive of an ink containing a white pigment)

which is printed on a substrate, prior to applying another substrate over the printed ink (col. 10, ll. 46-56).

5. Miyamoto teaches using particularly modified polyurethane resins as binders for aqueous ink compositions or as aqueous adhesive agents for film lamination (col. 1, ll. 5-14).

6. Miyamoto teaches (col. 1, ll. 43-48) that:

Since the various aspects of ink performance depend primarily upon the performance of binder resins, solvent based laminating using polyurethane resins as binders have heretofore been used extensively; those inks exhibit not only strong adhesion to various kinds of films but also good adaptability for laminating.

7. Miyamoto teaches that its printing ink has, *inter alia*, a pigment and a particularly modified polyurethane resin binder (col. 9, ll. 13-19).

8. Murphy teaches that a laminating ink is an ink which is printed on a plastic film which is subsequently laminated to another substrate, usually another plastic film, with the ink being sandwiched between the two substrates (col. 1, ll. 4-9).

9. Murphy teaches that “the ink must form an excellent bond between the two substrates because otherwise they would delaminate . . . must also, of course, have excellent printability on the plastic film” (col. 1, ll. 13-16).

10. Murphy teaches an ink having excellent printability on plastic films and excellent bond strength when used as a laminating ink comprising, among other things, a particular binder and a colorant.

PRINCIPLES OF LAW

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary consideration (e.g., the problem solved). *Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966). “[A]nalysis [of whether the subject matter of a claim is obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007); *see also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361 (Fed. Cir. 2006)(“The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.”); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969)(“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.’”).

ANALYSIS AND ISSUE

Appellant does not dispute the Examiner’s finding that Hein teaches a transparent PET heat seal layer/ a first opaque ink layer/an aluminum-deposited PET layer/a second opaque ink layer/a transparent PET heat seal

layer corresponding to the claimed hot melt layer. (*Compare* Ans. 3 with Br. 4-12; *see also* FF 1). Nor does Appellant dispute the Examiner's determination that it would have been obvious to employ various color inks, inclusive white color ink, in forming the first and second opaque ink layer of Hein. (*Compare* Ans. 4 with Br. 4-12; *see also* FF 2). Rather, Appellant contends that Hein alone, or together with either Whyzmuzis, Murphy or Miyamoto, would not have suggested the claimed two component (colorant and binder) adhesive layer between the transparent PET heat seal layer and the aluminum deposited PET layer (Br. 4-12). On the other hand, the Examiner states that Hein's first ink layer, which necessarily contains a binder (adhesive) and a pigment (or colorant), located between the transparent PET heat seal layer and the aluminum deposited PET layer, meets the claimed colored adhesive layer (Ans. 3-4). In support of this position, the Examiner refers to the disclosure of Whyzmuzis, Murphy or Miyamoto (Ans. 3-10).

Therefore, the central question in this case is: Is Hein's laminating ink embraced by the claimed colored adhesive? On this record, we answer this question in the affirmative.

Although Hein does not specifically mention the components of its ink layer, Whysmuzis, Murphy, and Miyamoto all teach that ink compositions used for printing on a plastic packaging or laminating films, such as polyethylene terephthalate films, contain a binder (adhesive component) and a colorant (e.g., pigments) (FF 3 and 5-10). Miyamoto, for example, teaches employing the same binder to make an adhesive and an ink to increase their adhesive strength (FF 5-6). It is desirable that the binders of

the laminating ink, such as those taught by Hein, like adhesives, must provide sufficient bond or adhesive strength to avoid delamination (FF 5-6 and 9-10). The laminating inks, unlike adhesives, contain pigments, in addition to the binders (adhesive components) to promote not only adhesion, but also printability. In other words, Hein's laminating ink, as explained by either Whyzmuzis, Murphy or Miyamoto, is embraced by the claimed *colored* adhesive layer containing an adhesive component (binder) and a white pigment or white colorant.

Even if the claimed colored adhesive does not embrace Hein's ink, the outcome of this decision would not be altered. As indicated *supra*, Whyzmuzis teaches that *heat-activated* adhesives can be used, together with a partially or fully printed ink, inclusive of a whit pigment containing ink, to improve lamination (FF 4). Thus, we determine that one of ordinary skill in the art would have been led to employ *heat-activated* adhesives, together with a white pigment ink, as suggested by Whyzmuzis, in forming Hein's laminated high barrier package material, motivated by a reasonable expectation of successfully further strengthening the lamination between the PET hot seal layer (provides heat for activating heat-activated adhesives) and the aluminum deposited PET layer.

Accordingly, based on the totality of record, including due consideration of Appellant's arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of 35 U.S.C. § 103(a).

ORDER

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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